M e m o r a n d u m

To:	Panel Members	Date:	January 23, 2003
From:	Creighton Chan, Manager Peter DeMauro, General Counsel	Analyst:	D. Woodside
Subject:	One-Step Agreement for **Applied Materials, Inc.** (www.amat.com)		

CONTRACTOR:

- Training Project Profile: Retraining: companies with out-of-state competition
- Legislative Priorities: Stimulating Exports/Imports
  Promotion of California's Manufacturing Workforce
  Moving to a High Performance Workplace
- Type of Industry: Manufacturing
- Repeat Contractor: Yes
- Contractor's Full Time Employees:
  - Company Wide: 15,925
  - In California: 6,116
- Fringe Benefits: Yes
- Union Representation: No
- Name and Local Number of Union representing workers to be Trained: N/A

CONTRACT:

- Program Costs: $4,243,200
- Substantial Contribution: $1,276,800
- Total ETP Funding: $2,966,400
- In-Kind Contribution: $26,261,734
- Reimbursement Method: Fixed-Fee
- County(ies) Served: Santa Clara, Alameda, San Jose and San Mateo

- Duration of Agreement: 24 months

SUBCONTRACTORS:

Mel Nelson & Associates, Milpitas, California, $90,000 for the provision of classroom/laboratory instruction in Continuous Improvement skills;

Omni Training Corporation, Rancho Cucamonga, California, $175,000 for the provision of classroom/laboratory instruction in Continuous Improvement skills;

AM Consulting and Training, San Rafael, California, $65,000 for the provision of classroom/laboratory instruction in Management skills;

Tech Trainer, Campbell, California, $145,000 for the provision of classroom/laboratory instruction in Computer skills;

Intervision Systems, Santa Clara, California, $175,000 for the provision of classroom/laboratory instruction in Computer skills;

American Electronics Association, Santa Clara, California, $97,000 for the provision of classroom/laboratory instruction in Continuous Improvement skills;

SEMI, Mountain View, California, $100,000 for the provision of classroom/laboratory instruction in Continuous Improvement and Business skills:

Online Job Training, Union City, California, $205,000 for the provision of classroom/laboratory instruction in Manufacturing skills;

Multi-Metrics, Menlo Park, California, $35,000 for the provision of classroom/laboratory instruction in Continuous Improvement skills; and

Herrera & Company, Stockton, California, for an amount not to exceed $354,648 for project administration.

THIRD PARTY SERVICE:

Herrera & Company assisted with the completion of the ETP application and Agreement documents at no cost to Applied Materials.

PRIOR PROJECTS:

The following are completed project statistics for ETP Agreements with this Contractor within the last five years:

Agreement No.	Location (City)	Term	Agreement Amount	Amount Earned	% Earned
ET09-0933	Santa Clara	12/30/98-12/29/00	$1,560,000	$1,560,000	100%

ACTIVE PROJECTS:

The following are current project statistics:

Agreement No.	Term	Agreement Amount	Number To be Retained	Number Enrolled	Number Completed Training	Number Hired (Complete for new hires only)	Number retained for 90 days
ET01-0198	12/31/00-12/30/02	$2,565,000	6000	5412	5412	N/A	3799

The Contractor expects to earn $2,319,000 or 90 percent of the Agreement amount based on the number of trainees completing training as of November 27, 2002.

NARRATIVE:

This project initially came before the Panel at its December 19, 2002 meeting. The Panel could not vote on Applied Material's Agreement at that time due to the lack of a quorum when the project was heard. There have been no changes to the project since it was proposed in December.

If approved, this would be Applied Materials' third training program funded by ETP. Applied Materials is eligible for standard ETP retraining under Title 22, California Code of Regulations, Section 4416(b) because it is a manufacturer.

Founded in 1967 and headquartered in Santa Clara, California, Applied Materials, Inc. develops, manufactures, markets, and services semiconductor wafer fabrication equipment and related spare parts for the semiconductor industry worldwide. Customers for its manufacturing equipment and products include semiconductor wafer manufacturers and semiconductor integrated circuit (or chip) manufacturers. These chip manufacturers use the chips they manufacture in their own products or sell them to other companies. Integrated circuits are the key components in most advanced electronic products including computers, telecommunications devices, automotive engine management systems, and electronic games. More than 16,000 of Applied Materials' semiconductor manufacturing systems are installed in factories around the world. While Applied Materials competes on a global basis (in 2001, over 60% of Applied Materials' sales were derived from exports), the majority of its manufacturing, research, development, and software design operations, are centered in the Silicon Valley. Applied Materials currently employs 6,116 Californians on a full-time basis. Employees located in Santa Clara, Sunnyvale, San Jose, Hayward, Fremont, and Mountain View will be the primary recipients of this training.

NARRATIVE: (continued)

The highly cyclical semiconductor equipment industry is currently experiencing a severe, prolonged downturn that has been widely publicized. This industry is normally characterized by fluctuating business cycles and the timing, length and volatility of these cycles are difficult to predict. Applied Materials' representatives believe that the current industry downturn may be the steepest decline in history, and cannot predict when a full recovery will begin. During periods of declining demand for semiconductor manufacturing equipment, customers typically reduce purchases, delay delivery of products and/or cancel orders.

Even with the current downturn, industry experts predict that the global demand for semiconductors will continue to grow at an accelerated rate and the associated technologies and products will need to change quickly in response to customer requirements and innovation. This forecast is based on the fact that every form of information technology utilizes semiconductors, and each new generation of products will consume an increasing number of chips with more exact geometric and performance requirements. In the long term, this means increasing demand for Applied Materials manufacturing systems and ultimately increased requirements for a high performance workplace comprised of a highly skilled workforce to design, develop, manufacture, and support these systems. In response, Applied Materials must invest in new manufacturing technologies, more sophisticated and faster computer systems, business process improvements, and with the assistance of the ETP, in worker education to sustain a high performance workplace.

In 2002, Applied Materials refocused the entire company's attention on five key business challenges that, if met, will help the company get closer to customers, strengthen its product performance, position the company for the eventual upturn in the high technology sector and foster a high performance workplace. The five business challenges are: 1) constructing smaller device features; 2) applying innovative new materials; 3) instituting process modularization; 4) helping customers control costs; and 5) integrating e-business applications throughout the company. As a result, frontline workers, including assemblers, technicians, administrative staff, engineers, sales staff, programmers, production supervisors, and managers must receive various types of training that will equip employees with the new skills needed to perform their job. Applied Materials is requesting ETP funds to assist in the retraining of 4,800 employees in Continuous Improvement, Computer, Business, Manufacturing, and Management skills which will allow the company to achieve its goals and provide its California workforce with transferable skills in demand throughout industry.

Manufacturing Skills are required for Assemblers, Technicians, Engineers, and Production Supervisors to enable them to build semiconductor equipment to customer specifications that mandate increased yield, production efficiencies, and more environmentally favorable manufacturing practices. Most chips are built on a base of silicon, called a wafer, and include multiple layers of wiring that connect a variety of circuit components, such as transistors and other structures. As the density of the circuit components is increased to enable smaller structures and greater computing power, the complexity of building the chip also increases, necessitating the formation of smaller structures and more intricate wiring schemes. These advances dramatically alter manufacturing protocols. Entirely new automated hardware is needed to process 300 millimeter wafers, including the use of new materials such as copper during the fabrication process. A clear understanding of these processes will allow staff to achieve smaller device features and help Applied Materials to meet its first two business challenges.

Computer Skills will be primarily provided to Programmers and Engineers; however, staff in all occupations may receive training in software application proficiency in factory automation, desktop

NARRATIVE: (continued)

productivity, and eBusiness applications. Employees must learn to use the automated tools for their respective assignments, from designing products to parts and order management to analysis, report preparation and financial and procurement transactions. Another major focus of Computer Skills training will be the implementation of eBusiness applications. Such on-line technology will result in greater efficiency by compressing response times, eliminating waste from transaction cycles, improving inventory management, and ensuring that products, processes, and results meet customer expectations. Trainees will also learn new web-based programming languages and software applications.

Business Skills training is required to provide more in-depth knowledge for engineers who work in the field in new technologies to professionally and effectively respond to customer demands. Subjects include process and measurement training; equipment specific training; site operations; and meeting the customer's exact requirements. Because of the highly technical nature of the Applied Materials products, a direct sales and service workforce must possess a high level of advanced technical skills in addition to marketing and sales skills. The overall objective of the Business Skills training is to prepare these workers to foster long-term customer and supplier relationships, and provide a complete understanding of the business environment as well as the ability to conduct effective business operations.

Continuous Improvement training will promote device innovation while simultaneously achieving zero product defects, reliability, and higher yields so customers can control costs. Engineering, production, and technical staff will receive training on a newly developed Continuous Improvement program, which has been titled "2X4" which means twice the improvement in cost at four times the transactional speed. Courses will include advanced problem solving, decision-making, and process improvement training.

Management Skills are required for Managers and Production Supervisors involved with day-to-day production and quality. New manufacturing technologies require Supervisors and Managers to receive training in leadership, coaching, team development, project management, and core practices for innovation and effectiveness in a high performance workplace.

All of the proposed courses included in the ETP training plan are critical to the company's ongoing success which requires a productive workforce well-versed in the various aspects of the customers' needs and markets (i.e., fabrication equipment, factory software, and customer support and service). Training will consist of classroom/laboratory training and computer-based training (CBT) and each trainee will receive between 10 to 160 hours of classroom/laboratory and 0 – 30 hours of CBT training.

Supplemental Nature of Training

Applied Materials certifies for this third contract that the proposed training is supplemental and directly meets the worker education requirements to achieve at least one of the five aforementioned new strategic business challenges. As such, ETP funds will not displace existing training provided by Applied Materials. The previous ETP project focused on the fundamental skills required to work under a new set of manufacturing and process technologies. For example, the introduction of 300 mm wafer processing required a wholesale retooling of Applied Materials' manufacturing protocols, continuous improvement programs, and worker proficiencies in business and computer skills. This training proposal is different from the previous ETP contract in that employees will be taught advanced Manufacturing skills in 300mm wafer processing, a new Continuous Improvement program, and different Business, Management, and Computer skills than those provided in previous projects.

NARRATIVE: (continued)

For instance, the Continuous Improvement training in the previous projects offered foundation training in quality processes. The proposed Continuous Improvement training is a new quality initiative titled "2X4", which means twice the improvement in cost at four times the transactional speed. Employees must be retrained in advanced problem solving, production-level decision making, and relevant internal business process applications in order to implement this program. Computer skills delivered in the previous project provided introductory skills in e-Business and desktop applications. The proposed Computer skills training is specifically designed for emerging technologies in factory automation, desktop productivity, and eBusiness applications. Additionally, as part of its new strategy, Applied will require more efficient internal operations and customer and supplier interactions. All trainees who interact with the customer must learn to use the new automated tools for their respective assignments, from designing products to parts and order management to analysis, report preparation and financial and procurement transactions. This training was not provided under the Business and Management skills in the previous project, which developed only base-line skills to help Applied Materials adapt to a high performance workplace. In summary, the company has certified that proposed training has not been available to Applied Materials employees in the past and employees who participated in the previous project will not receive the same training in this project.

Without ETP training funds, Applied Materials would not provide the requested supplemental training to update its workers' skills in a classroom environment nor within the timeframes needed to successfully meet the worker education requirements dictated by its current business challenges. The introduction of an increasingly broader set of new products and technologies, including those to support the transition to smaller device sizes, new materials and 300mm wafers, is growing increasingly complex. If Applied does not develop and introduce new products and technologies in a timely and cost-effective manner, its competitive position, financial condition, and California operations could be materially and adversely affected.

Further, Applied Materials will continue its ongoing training, which includes: general computer skills for administrative and clerical employees; leadership skills training for those employees seeking promotion; new hire and company orientation; workplace literacy; on-the-job training in manufacturing skills; executive development; general industry safety training; sexual harassment prevention, stress management, and violence in the workplace training; and any training related to developing the company mission and values. In addition to its ongoing training, Applied Materials anticipates spending approximately $17 million for training during the two years following the ETP Agreement, not including wages and benefits paid to trainees during training.

In-Kind Contribution

Applied Materials' total in-kind contribution will be $26,261,734. This amount reflects $8,794,230 in wages that will be paid to employees while attending ETP-funded training; $9,793,520 in additional direct training costs including in-house and external trainers, training materials, leased classroom facilities and training equipment costs dedicated solely to the ETP training and which are in excess of ETP funding; and $7,673,984 in lost production costs while ETP trainees attend training.

COMMENTS:

All participants in this project meet the Panel definition of frontline worker under Title 22 California Code of Regulations, Section 4400(ee) except for 300 managers involved in software or product development.

NARRATIVE: (continued)

Title 22, California Code of Regulations, Section 4410 (a) states in part that "A substantial contribution of not less than 30 percent of the total Panel training and administrative costs, exclusive of in-kind contributions and/or any other special contributions required by the Panel, shall be imposed on any employer for retraining at a facility which previously benefited, directly or indirectly, from Panel funding under at least two prior Panel agreements at the same facility in the amount of $250,000 or more." Four facilities located in Santa Clara County, which will be participating under this proposal, have benefited from more than $250,000 in ETP funds over the past two Agreements. There are several other facilities that have not benefited in excess of this amount, but the Company has agreed to pay the substantial contribution for all trainees to demonstrate its readiness to partner with the ETP and its commitment to continue its employee training programs.

PROPOSED ACTION:

Staff recommends that the Panel approve this One-Step Agreement if funding is available and the project meets Panel priorities. This recommendation is based on the following: (1) Applied Materials has made and continues to make substantial investments in training its personnel in California even during an economic downturn; and (2) funding Applied Materials has a multiplier effect on the local Bay Area economy. Applied Materials uses hundreds of vendors from very small specialty firms (5 to 10 employees) to supply parts and components to mid-sized manufacturers that make valves and machine parts. The stability of Applied Materials, Inc. benefits numerous businesses and their workers. In addition, this training program provides Applied Materials' California workers with skills in demand throughout the economy and will assist the company in maintaining its competitiveness in the global marketplace.

TRAINING PLAN:

Grp/Trainee Type	Types of Training	No. Retain	No. Class/Lab Videocnf. Hrs	No. CBT Hrs	No. SOST Hrs.	Cost per Trainee	Hourly Wage after 90 days
Job Number 1 Retrainees	Menu: Business; Continuous Improvement; Management; Manufacturing; and Computer Skills	4,800	10-160	0-30	0	$618	$13.07-$48.79

	Range of Hourly Wages $13.07-$48.79
	Prevalent Hourly Wage $32.18
	Average Cost per Trainee $618

Health Benefit used to meet ETP minimum wage: N/A.	**Turnover Rate** 10%	**% of Mgrs & Supervisors to be trained:** 6%

Hours	
Class/Lab	**CBT**
10 – 160	**0 - 30**

SUBJECT:

Computer Skills: These courses provide supplemental training in factory automation, desktop productivity, and eBusiness applications.
Customer Relationship Management Software
Supply Chain Management Application
eBusiness Applications
Factory Automation Tools and Techniques
Internet Markup Language
Advanced Desktop Applications Software
Database Development
Enterprise Resources Planning Software
Productivity Tools Applications

Continuous Improvement: These courses provide supplemental training in advanced continuous improvement tools and techniques:
Advanced Process Mapping and Measurement Training
Semiconductor Fabrication Equipment Calibration
Advanced Product Development Process
Zero Product Defects Tools and Techniques
Designing for Reliability and Improved Yields
Advanced Systems Integration Improvement Training
Computer Assisted Design (CAD) Tools and Techniques
Integrated Manufacturing Systems – Through Innovation
Advanced Process Improvement Training
2x4 Goals and Objectives
2x4 Tools and Techniques
Advanced ISO Deployment Skills
Advanced Total Quality Management Methodology

Manufacturing Skills: These courses provide supplemental training in advanced machines and assembly processes
Advanced Machine Assembly
Advanced Preventative Maintenance Techniques
Advanced Etching Tools and Techniques
300mm Wafer Fabrication Tools and Techniques
Advanced Materials Conventions and Applications
Advanced Plasma process optimization
Endura Machine Operations under 300mm
Advanced Copper Process Technology
Semivision Advanced Operations
Multiple Chamber Functionality
Chemical Vapor Deposition Process Optimization
Mirra Chemical Mechanical Polishing Advanced Operations and Calibration
Vectra Integrated Material Program Advanced Operations and Calibrations
Advanced Dry Wafer Processing

All trainees will receive a minimum of 40 but not more than 160 hours of instruction. The minimum and maximum class/lab is 10 and 160 hours, and the minimum and maximum CBT hours is 0 (zero) and 30 hours. As permitted under the flexible reimbursement system, employees will attend a combination of class/lab and/or CBT training but must abide by the minimum and maximum hours depicted in this curriculum. ISO training is limited to no more than 8 hours of classroom instruction.

Plasma Etch Tools and Techniques

All trainees will receive a minimum of 40 but not more than 160 hours of instruction. The minimum and maximum class/lab is 10 and 160 hours, and the minimum and maximum CBT hours is 0 (zero) and 30 hours. As permitted under the flexible reimbursement system, employees will attend a combination of class/lab and/or CBT training but must abide by the minimum and maximum hours depicted in this curriculum. ISO training is limited to no more than 8 hours of classroom instruction.

Hours	
Class/Lab	**CBT**
10 – 160	**0 - 30**

SUBJECT:

Business Skills: These courses provide supplemental training to field and customer engineers to respond to customer demands.

Advanced Customer Communications and Awareness
Customer Finance and Buying Decision Modeling
Advanced Product Knowledge
Advanced Customer Service Relationships
Influencing For Impact
Managing in a Complex Environment
Advanced Multi-Pass Grey Development Discussion
Technical Schema Presentation Skills
Advanced Program Management
Product Marketing for Engineers
Advanced Original Equipment Manufacturer Sales Techniques
Marketing Promotion and Position
300mm Wafer Fabrication Value and Pricing Techniques
Advanced Computer Based Decision Models

Management Skills: These courses provide supplemental training to front-line managers and supervisors

Advanced Leadership Skills
Advanced Coaching Skills
Advanced Project Management
Technical Team Development and Leadership
Managing for Technology Innovation
Technical Business and Finance Management

All trainees will receive a minimum of 40 but not more than 160 hours of instruction. The minimum and maximum class/lab is 10 and 160 hours, and the minimum and maximum CBT hours is 0 (zero) and 30 hours. As permitted under the flexible reimbursement system, employees will attend a combination of class/lab and/or CBT training but must abide by the minimum and maximum hours depicted in this curriculum. ISO training is limited to no more than 8 hours of classroom instruction.